CLAIMS

What is claimed is:

1. A method for communicating between a base station and at least one subscriber unit; comprising:

receiving at said subscriber unit a pilot signal from said base station;

generating at said subscriber unit an access signal, and epoch aligning the access signal to said received pilot signal;

transmitting said epoch-aligned access signal from said subscriber unit to said base station;

receiving a confirmation signal at said subscriber unit in response to the transmission of said epoch-aligned access signal;

determining a timing difference value at the subscriber unit between said access signal and said confirmation signal; and

storing said difference value.

2. A method for communicating between a base station and at least one subscriber unit; comprising:

transmitting a pilot signal from said base station;

receiving said pilot signal at said subscriber unit;

generating at said subscriber unit, in response to said pilot signal, an access signal;

epoch aligning said access signal to said pilot signal;

transmitting said epoch-aligned access signal from said subscriber unit to said base station;

receiving said epoch-aligned access signal at said base station;

generating a confirmation signal at said base station in response to said received

epoch-aligned access signal;

transmitting said confirmation signal from said base station to said subscriber unit;

receiving said confirmation signal at said subscriber unit;

determining a difference value at said subscriber unit between the transmission of said access signal and the receipt of said confirmation signal; and

storing said difference value.

3. A method for communicating between a base station and at least one subscriber unit; comprising:

transmitting a reference signal from the base station;

receiving the reference signal at the subscriber unit;

determining the epoch of said reference signal;

generating at the subscriber unit an epoch-aligned access signal in response to the receipt of the reference signal;

transmitting the epoch-aligned access signal from the subscriber unit to the base station;

receiving at the base station the epoch-aligned access signal from the subscriber unit;

generating an epoch-aligned confirmation signal at the base station;

transmitting the epoch-aligned confirmation signal from the base station to the subscriber unit;

receiving the epoch-aligned confirmation signal at the subscriber unit;

determining a difference value at the subscriber unit between the transmission of the epoch-aligned access signal at the subscriber unit and the receipt of the epoch-aligned confirmation signal at the subscriber unit; and

storing the difference value at the subscriber unit.

4. A method for communicating between a base station and at least one subscriber unit; comprising:

transmitting a pilot signal from the base station;

receiving the pilot signal at the subscriber unit;

determining the epoch of the pilot signal;

generating at the subscriber unit an epoch-aligned access signal in response to the receipt of the pilot signal;

transmitting the epoch-aligned access signal from the subscriber unit to the base station;

receiving at the base station the epoch-aligned access signal from the subscriber unit;

generating an epoch-aligned confirmation signal at the base station;

transmitting the epoch-aligned confirmation signal from the base station to the subscriber unit;

receiving the epoch-aligned confirmation signal at the subscriber unit;

determining a difference value at the subscriber unit between the transmission of the epoch-aligned access signal at the subscriber unit and the receipt of the epoch-aligned confirmation signal at the subscriber unit; and

storing the difference value at the subscriber unit.

5. A method for communicating between a base station and at least one subscriber unit; comprising:

transmitting a pilot signal from the base station;

searching for said pilot signal, at the subscriber unit, within a first code phase delay range;

acquiring said pilot signal at the subscriber unit within said first code phase delay

range;

generating, at the subscriber unit, an access signal and epoch aligning the access signal to said pilot signal;

transmitting the epoch-aligned access signal from the subscriber unit to the base station;

receiving the epoch-aligned access signal at said base station;

generating, at the base station, in response to the receipt of said epoch-aligned access signal, a confirmation signal;

transmitting said confirmation signal from the base station to the subscriber unit;

receiving said transmitted confirmation signal at the subscriber unit;

determining a timing difference value at the subscriber unit between the transmission of said access signal from the subscriber unit and the receipt of said confirmation signal at the subscriber unit; and

storing said difference value.

6. The method of claim 5, further including increasing the power level of said access signal until said confirmation signal is received from the base station.

7. The method of claim 6 further including ceasing the increase in transmission power level from the subscriber unit when said conformation signal is received.

8. The method of claim 7 wherein the power level is selectively increased.

9. The method of claim 8 further including determining, at the base station, the duration between the transmission of a communication sent to the subscriber unit and the

receipt of a responding communication from the subscriber.

10. The method of claim 9 wherein said step of determining further includes calculating the timing difference between said determined duration and a desired duration.

11. The method of claim 10 further including transmitting, from said base station, a timing signal to the subscriber unit based upon said calculated timing difference.

12. The method of claim 11 further including receiving, at the subscriber unit, said timing signal and delaying signals transmitted from the subscriber unit by said calculated timing difference.

13. A method for establishing an initial communication between a base station and at least one subscriber unit; comprising:

transmitting a pilot signal from the base station;

searching for said pilot signal, at said subscriber unit, within a first code phase delay range;

acquiring said pilot signal at said subscriber unit within said first code phase delay change;

generating at said subscriber unit an access signal and epoch aligning the access signal to said pilot signal;

transmitting the epoch-aligned access signal from said subscriber unit to said base station while continually increasing the transmission power of said epoch-aligned access signal at a first rate;

receiving said epoch-aligned access signal at said base station;

generating at said base station, in response to the receipt of said epoch-aligned access signal, a confirmation signal;

transmitting said confirmation signal from said base station to said subscriber unit;

receiving said transmitted confirmation signal at said subscriber unit;

ceasing the increase in transmission power of said epoch-aligned access signal when said confirmation signal is received;

determining a timing difference value at said subscriber unit between the transmission of said access signal from said subscriber unit and the receipt of said confirmation signal at said subscriber unit; and

storing said difference value.

14. The method of claim 13 further comprising establishing a subsequent communication between said base station and said subscriber unit comprising:

searching for said pilot signal within a second code phase delay range, said second code delay range being based upon said stored difference value; and

acquiring said pilot signal at said subscriber unit within said second code phase delay range.

15. The method of claim 14 further comprising generating at said subscriber unit a second access signal and epoch aligning the second access signal to said pilot signal;

transmitting said second epoch-aligned access signal from said subscriber unit to said base station while continually increasing the transmission power of said second epoch-aligned access signal at a second rate.

16. The method of claim 15 whereby said second rate is greater than said first rate.

17. The method of claim 15 whereby said second code phase delay range is smaller than said first code phase delay range.

18. A method for communicating between a base station and at least one subscriber unit; comprising:

transmitting a pilot signal from the base station;

searching for said pilot signal within a first code phase delay range;

acquiring the pilot signal at the subscriber unit within the first code phase delay range;

generating at the subscriber unit an access signal and epoch aligning the access signal to the pilot signal;

transmitting the epoch-aligned access signal from the subscriber unit, to the base station at an initial power level while continually increasing the transmission power of the epoch-aligned access signal at a first rate;

receiving the epoch-aligned access signal at the base station;

generating, at the base station, in response to the receipt of the epoch-aligned access signal, a confirmation signal;

transmitting the confirmation signal from the base station to the subscriber unit;

ceasing the increase of the power level upon the receipt of the confirmation signal;

determining a difference value at the subscriber unit between the transmission of the access signal from the subscriber unit and the receipt of the confirmation signal at the subscriber unit; and

storing the difference value.

19. The method of claim 18, further including storing the value of the power level when the increase is ceased.